

**Remarks**

Claims 1-63, 66-74, and 89-91 are pending in the application. Claim 64 has been canceled without prejudice. The Applicants expressly reserve the right to prosecute in subsequent divisional applications or continuing applications or both claims covering the subject matter of the claim canceled to conform with the Applicants election in response to the Restriction Requirement. 35 U.S.C. §§ 120-121. Claims 27, 28 and 34-37 stand withdrawn as being drawn to a non-elected species. Upon allowance of a generic claim, Applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141.

Claims 1, 5, 31, 39, 42-45, 48, 49, 52-54, 56-58, 61, 62, and 67 have been amended. Support for the claim amendments can be found throughout the application, including the claims as originally filed. Importantly, no new matter has been added to the claims. The amendment to the claims should not be construed to be an acquiescence to any of the rejections. The amendments to the claims are being made solely to expedite the prosecution of the above-identified application. The Applicant reserves the right to further prosecute the same or similar claims in subsequent patent applications claiming the benefit of priority to the instant application. 35 USC § 120.

The specification has been amended to remove confusion over how certain variables are defined.

**Objection to the Disclosure**

The disclosure is objected to by the Examiner for being unclear regarding the definition of certain variables in the Definition section of the specification. The Applicants have amended the specification to clarify what definition is being referred to for variables R<sub>8</sub>, R<sub>9</sub>, R<sub>10</sub>, and R<sub>41</sub>. The Applicants respectfully submit that the disclosure is clear with respect to its definitions and request the withdrawal of the objection by the Examiner.

**Response to Rejections under 35 U.S.C. 112¶1**

Paragraph numbers corresponding to the paragraph numbers in the Examiner's office action have been used for clarity.

5. Claims 1-5, 7-13, 16, 17, 19-22, 25, 26, 29-33, 38-43, 45-51, 54, 55, 57-60, 63, 66-74 and 89-91 stand rejected under 35 U.S.C. 112¶1 based on the Examiner's contention that they fail to comply with the written description problem. Specifically, the Examiner contends that the specification lacks written description for substituted Z when the substituents are either "acyl" or "alkoxycarbonyl." The Applicants respectfully traverse this rejection.

Claims 1 and 39, from which claims 2-5, 7-13, 16, 17, 19-22, 25, 26, 29-33, 38-43, 45-51, 54, 55, 57-60, 63, 66-74 and 89-91 depend, as amended do not include acyl and alkoxycarbonyl as possible substituents for Z. Therefore, the withdrawal of the 35 U.S.C. § 112, first paragraph, rejection of claims 1-5, 7-13, 16, 17, 19-22, 25, 26, 29-33, 38-43, 45-51, 54, 55, 57-60, 63, 66-74 and 89-91 for lack of written description is respectfully requested.

6, 7. Claim 64 stands rejected under 35 U.S.C. 112¶1 based on the Examiner's contention that it fails to comply with the enablement requirement. The Applicants respectfully submit that this rejection has been rendered moot by the cancellation of claim 64.

8. Claims 1-26, 29-33, 38-64, 66-74 and 89-91 stand rejected under 35 U.S.C. 112¶1 based on the Examiner's contention that they fail to comply with the enablement requirement. The Applicants respectfully submit that regarding claim 64 the rejection is moot in light of the cancellation of claim 64. Regarding the remaining claims, the Examiner contends that the claims as constructed are broadly drawn to a "system" or a "coating" or that the compounds as defined encompass numerous compounds. The Applicants respectfully traverse this rejection. Regarding the numerous compounds that make up the present invention, the Applicants respectfully submit that the claims are enabled by the specification because the experiments presented on pages 42-50 of the specification show that it is the -YS(O)<sub>2</sub>X moiety that imparts the anti-fouling properties

to the system or coating, and that compounds comprising this moiety can tolerate a wide variety of Z moieties and still be effective at preventing biofouling. For instance, see page 46, the second full paragraph, where it is reported that similar compounds lacking the sulfate ester group (e.g. cinnamic acid, ferulic acid, coumaric acid) do not show anti-fouling properties. Therefore, the compounds that make up the present invention are enabled because they all comprise this important sulfate ester moiety, and one of ordinary skill in the art of organic synthesis would be able to easily prepare them.

Regarding the terms “coating” and “system,” it would be impossible for the Applicants to prepare an actual example of every object that the coating of the present invention could be applied to in order to prepare the system of the present invention. Additionally, it is not required under patent law practice to supply every possible example of a claimed genus, as stated in Section 2164.02 of the MPEP, reproduced below for the Examiner’s convenience:

### **Working Examples and a Claimed Genus**

“For a claimed genus, representative examples together with a statement applicable to the genus as a whole will ordinarily be sufficient if one skilled in the art (in view of level of skill, state of the art and the information in the specification) would expect the claimed genus could be used in that manner without undue experimentation. Proof of enablement will be required for other members of the claimed genus only where adequate reasons are advanced by the examiner to establish that a person skilled in the art could not use the genus as a whole without undue experimentation.”

The Applicants respectfully submit that the Examiner has not provided adequate reasons why a person skilled in the art could not use the genus as whole without undue experimentation. To one of ordinary skill in the art, preparing a coating comprising an effective amount of the compounds represented by formula 1 and it to a surface is a matter of routine experimentation, not undue experimentation. In order to preserve the scope of the invention the Applicants are entitled to, the claims necessarily have to be in terms of a “coating” or “system.”

Accordingly, the Applicants respectfully request the withdrawal of the rejection of the claims under 35 U.S.C. 112¶1.

**Response to Rejections under 35 U.S.C. 112¶2**

Paragraph numbers corresponding to the paragraph numbers in the Examiner's office action have been used for clarity.

9. Claims 1-26, 29-33, 38-64, 66-74 and 89-91 stand rejected under 35 U.S.C. 112¶2 based on the Examiner's contention that they are indefinite. The Examiner makes several points that are addressed individually below.

The Examiner first contends that the definition of Z in certain dependent claims are not consistent with the definition of Z in the independent claims. In particular, the Examiner does not think that the definition "heteroalkylphenyl" in claims 5 and 43 are within the scope of the definition of Z in claims 1 and 39, respectively. The Applicants respectfully traverse this rejection. Claims 5 and 43 have been amended to remove the term "heteroalkylphenyl" from the definition of Z. Therefore, claims 5 and 43 are definite regarding the definition of Z.

Secondly, the Examiner contends that claims 5, 43 and several other dependent claims are indefinite because although it is clear that alkylphenyl, arylphenyl, or heteroarylphenyl are within the scope of Z, it is not clear how *substituted* alkylphenyl, *substituted* arylphenyl, and *substituted* heteroarylphenyl are within the scope of Z as defined in the independent claims. The Applicants respectfully traverse this rejection. The Applicants respectfully submit that the dependant claims in question do not lack clarity because the independent claims from which they depend clearly state that Z is optionally substituted, and define possible substitutions of Z. Does the Examiner think that it is redundant to state that Z is optionally substituted in the dependant claims when it is stated in the independent claims, and that this renders the claims unclear? If the Examiner maintains this 35 U.S.C. 112¶2 rejection, the Applicants request further clarification.

Thirdly, the Examiner contends that claims 6, 44, and several other dependant claims allow Z to represent 4-(1-methyl-1-phenylethyl)phenyl but that it is not clear how

this meets the limitations of Z as set forth in the independent claims. The Applicants respectfully traverse this rejection. 4-(1-Methyl-1-phenylethyl)phenyl is a phenyl ring substituted at the 4-position by an aralkyl group (1-methyl-1-phenylethyl). The independent claims clearly define Z as an aryl group (e.g. phenyl) optionally substituted by an aralkyl group. The Applicants respectfully submit that the defendant claims defining Z as 4-(1-methyl-1-phenylethyl)phenyl are within the scope of Z as defined in the independent claims, and, therefore, definite.

Fourthly, the Examiner contends that claims 31 and 67 are indefinite because the unit “ml” is not conventionally used with solids. The Applicants respectfully traverse this rejection. Claims 31 and 37 have been amended to their original form of percents where it is now clear that the percents are by weight. The Applicants respectfully submit that percent by weight is conventionally used to describe solids, and that someone of ordinary skill in the art would understand the metes and bounds of the claims.

Lastly, the Examiner contends that claim 64 is indefinite because of the term “permanent.” The Applicants respectfully submit that this rejection has been rendered moot by the cancellation of claim 64.

Accordingly, the Applicants respectfully request the withdrawal of the rejection of the claims under 35 U.S.C. 112 ¶2.

**Response to Rejections Under 35 U.S.C. § 102(b)**

Claims 39-42, 44-49, 52-54, 56-58, 61-63, 66, 68-73 and 89-91 stand rejected based on the Examiner’s contention that they are anticipated by The Merck Index, Tenth Ed. (1983), pp. 876-877, where a solution of methyl sulfate is disclosed. The Applicants respectfully traverse this rejection. Claims 39-42, 44-49, 52-54, 56-58, 61-63, 66, 68-73 and 89-91, as amended, do not read on a solution of methyl sulfate, which would require Z to be a C<sub>1</sub> alkyl group. When Z is an unbranched alkyl group, it is limited to a C<sub>2</sub>-C<sub>7</sub> alkyl group. Because the Merck Index does not disclose each and every limitation of the claims, the Applicants respectfully submit that the Merck Index does not anticipate claims 39-42, 44-49, 52-54, 56-58, 61-63, 66, 68-73 and 89-91.

Accordingly, the Applicants respectfully request the withdrawal of the rejection of the claims under 35 U.S.C. § 102(b) over The Merck Index, Tenth Ed. (1983), pp. 876-877.

**Claim Rejections Based on the Judicially-Created  
Doctrine of Obviousness-Type Double Patenting**

Claims 39-64, 66-74 and 89-91 stand rejected under the judicially-created doctrine of obviousness-type double patenting, based on the Examiner's contention that they are not patentably distinct from claims 34-58 and 65-78 of copending U.S. Patent Application No. 09/405,299 (the "'299 application"). The Applicants respectfully request that the Examiner hold in abeyance all obviousness-type double patenting rejections based on the '299 application until allowable subject matter is indicated, at which point the Applicants will file a terminal disclaimer if necessary.

**Fees**

The Applicants believe that no additional fees are due in connection with the filing of this paper. Nevertheless, the Director is hereby authorized to charge any additional required fee to our Deposit Account, **06-1448**.

### **Conclusion**

In view of the above amendments and remarks, the Applicants believe that the pending claims are in condition for allowance. If a telephone conversation with Applicant's Agent would expedite prosecution of the application, the Examiner is urged to contact the undersigned.

Respectfully submitted,  
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